Kenai Fjords National Park Freshwater Fish Inventory

Presented by Joe Miller
Katmai National Park

Funding provided by the National Park Service
Inventory and Monitoring Program

Objectives

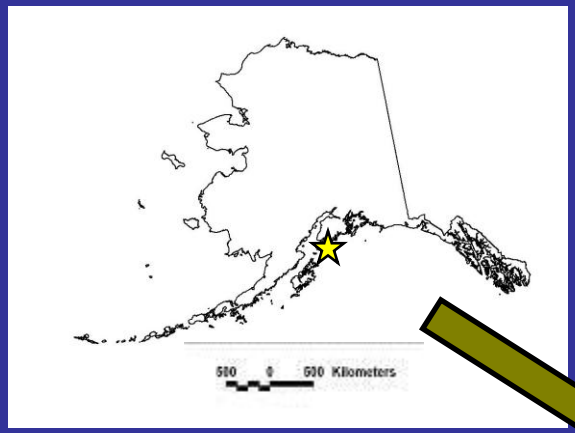
- Document previously undocumented freshwater fish species within KEFJ

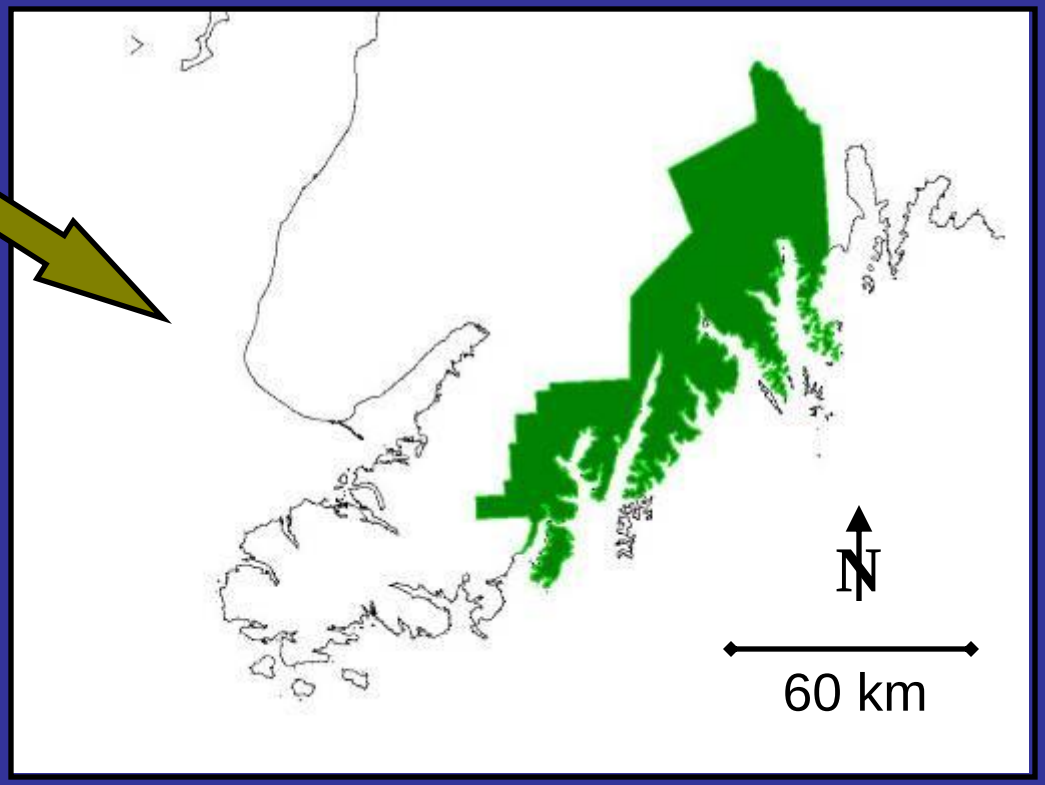
1. Catostomus catostomus (longnose sucker)
2. Cottus aleuticus (coastrange sculpin)
3. Eleginus gracilis (saffron cod) ***Primarily marine
4. Lampetra tridentata (Pacific lamprey)
5. Prosopium cylindraceum (round whitefish)

- Document life history and biological characteristics of species encountered

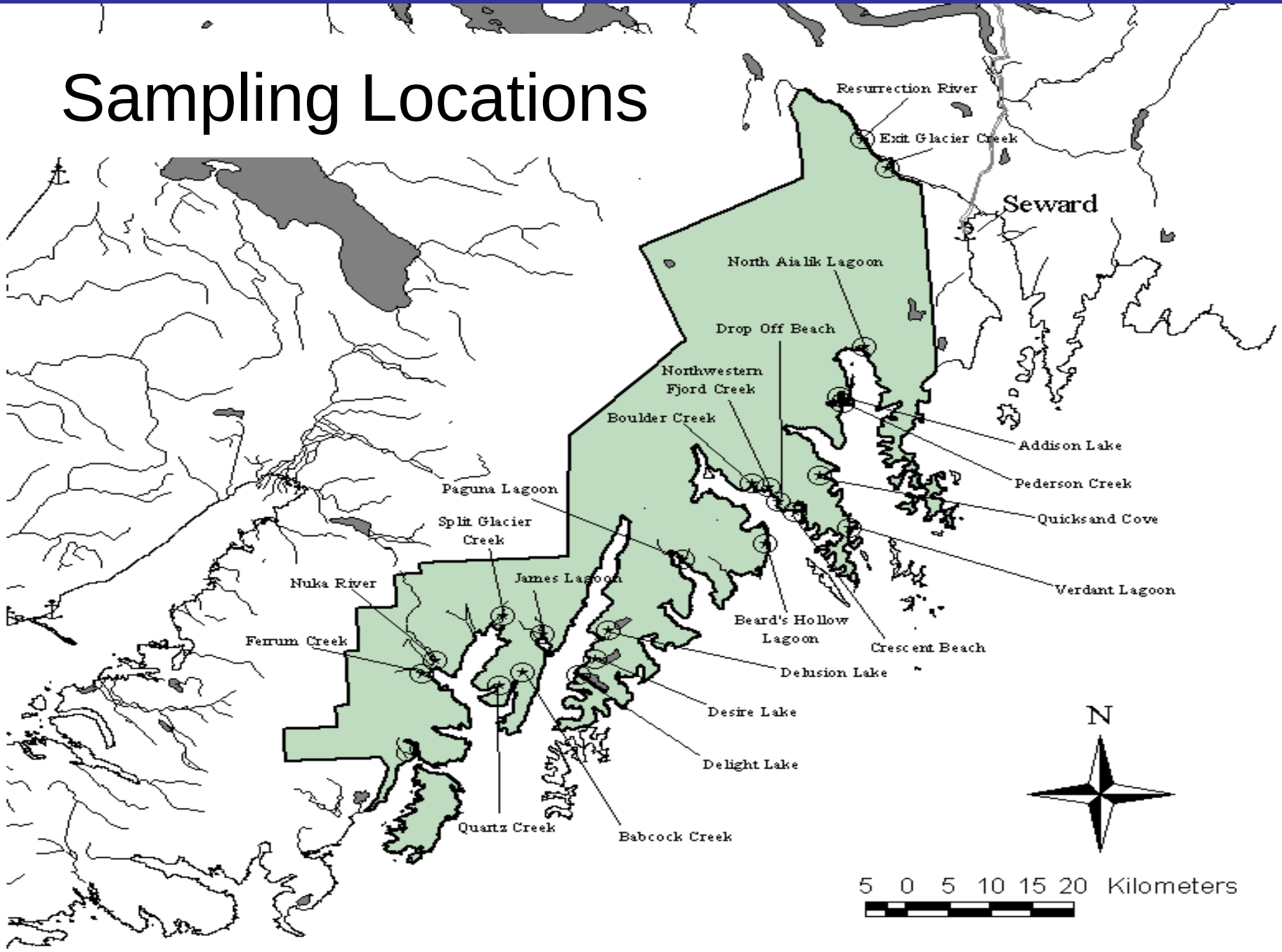
Study Location

- KEFJ located in Southcentral Alaska on Kenai Peninsula





Sampling Locations



Habitats Sampled (30+ locations)

Addsion Lake
Addison Lake Pond
Beard's Hollow Lagoon
Boulder Creek Lake
Boulder Creek
Crescent Beach Creek
Crescent Beach Pond
Delight Lake
Delight River
Delight Estuary
Desire Creek
Delusion Creek
Dropoff Beach Creek
Exit Creek
Ferrum Creek
James Lagoon Creek A
James Lagoon River A
Nuka River
Northwestern Fjord Creek
Northwestern Fjord Pond
Paguna Creek
Paguna Lagoon
Pederson Creek
Quicksand Creek
Resurrection River
"Split Glacier Creek"
Shelter Cove Creek
Shelter Cove Lake
Verdant Lagoon

Representative Habitats

More habitat diversity

Sampling Methods

- Seines, hand nets, minnow traps, angling

Results: low diversity, highly adaptable assemblage

Pacific staghorn sculpin

threespine stickleback

Coastrange sculpin

Common salmonids

Dolly Varden

sockeye salmon

coho salmon

Fishes encountered during inventory

All are euryhaline or anadromous

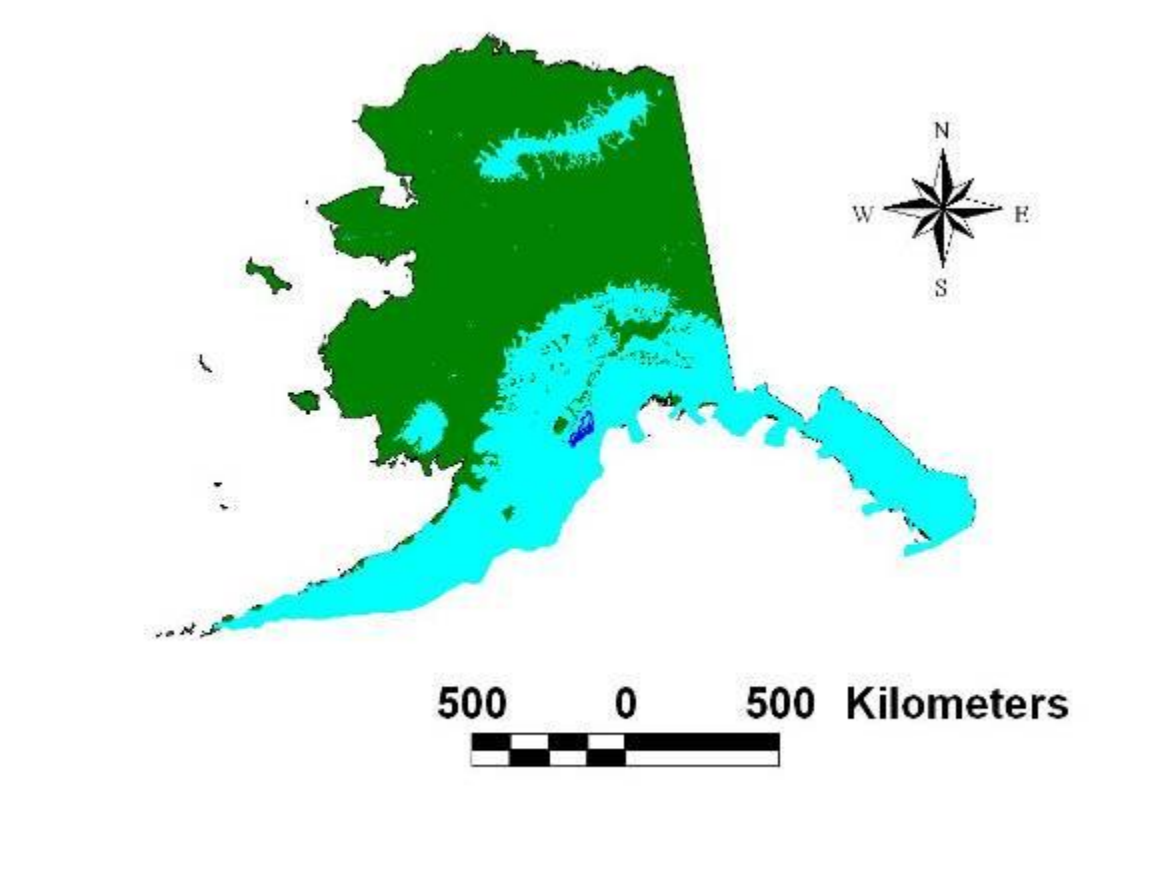
1. chum salmon
2. coho salmon
3. pink salmon
4. king salmon
5. sockeye salmon
6. Dolly varden
7. coastrange sculpin (previously undocumented)
8. Pacific staghorn sculpin
9. threespine stickleback
10. eulachon

So what??

- Fish assemblage reflects zoogeographic patterns seen elsewhere in recently deglaciated habitats:

1. Colonizers are capable of using coastal dispersal routes
2. Fishes limited to inland dispersal are not well represented…stenohaline freshwater species not found

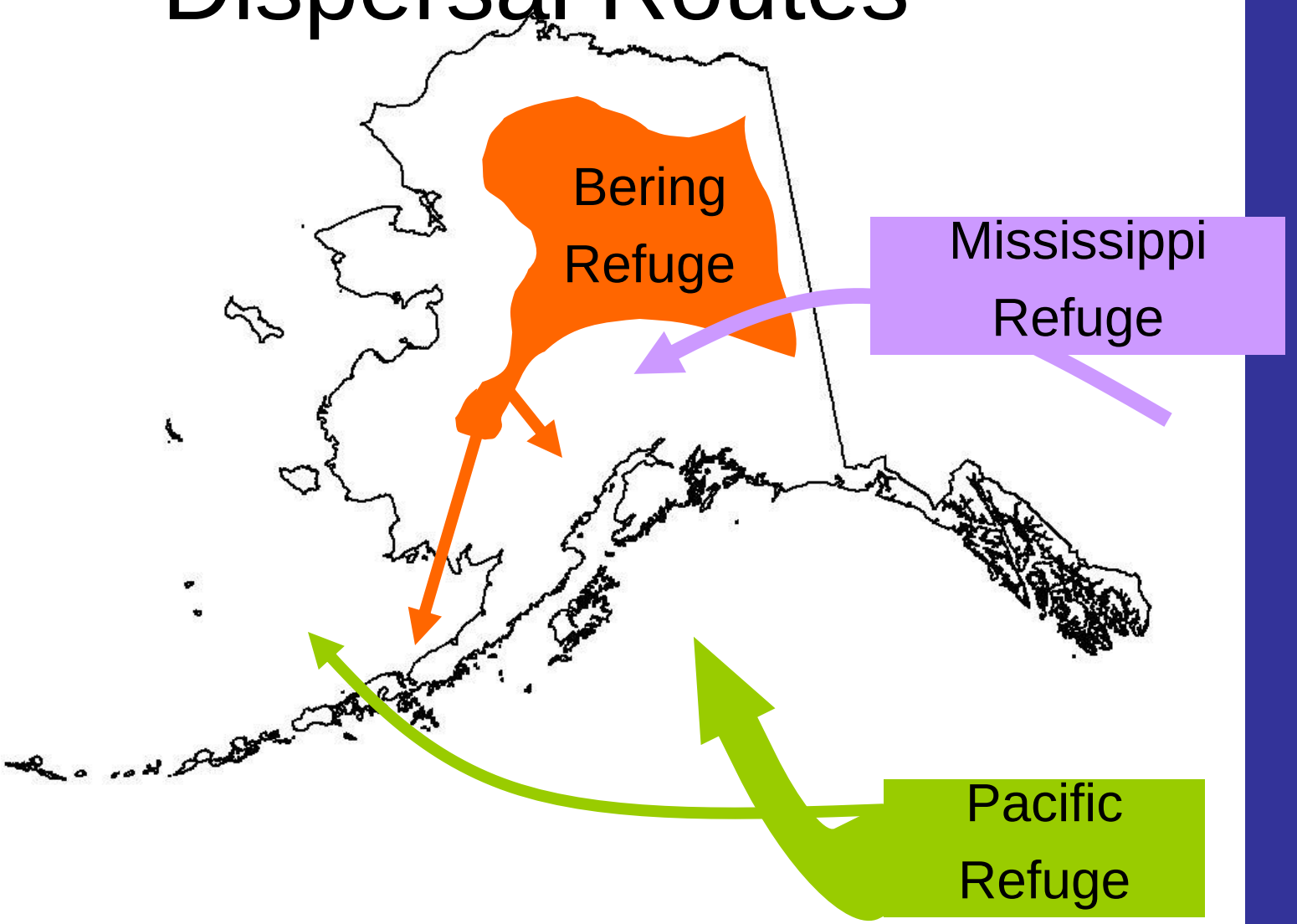
Glacial effects



During Wisconsin period,

Cordilleran ice sheet covered KEFJ

Dispersal Routes



Conclusions

- KEFJ colonization has occurred rapidly
- Sockeye salmon, threespine sticklebacks, and coastrange sculpins found in habitats formed in past few decades.
- KEFJ is an excellent place to examine patterns of adaptation and evolution
- KEFJ freshwater fish communities are more similar to SE AK than SW AK

Ice still covers much of the modern landscape

- Existing ice and mountainous terrain have limited colonization by FW fish and associated species diversity
- Glacial retreat is rapidly creating new aquatic habitats

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